1062-53-3 **William P. Minicozzi*** (minicozz@jhu.edu), Department of Mathematics, JHU, 3400 N. Charles St., Baltimore, MD 21218. *Generic singularities of Mean Curvature Flow.*

In mean curvature flow (or MCF), a surface evolves to minimize its surface area as quickly as possible. One of the challenges of MCF is that the flow starting from a closed surface (like a sphere) always becomes singular and one of the most important problems is understanding these singularities. The simplest example comes from a round sphere, which evolves by staying round but having the radius shrink until it hits zero and then just disappears (or "becomes extinct"). Matt Grayson proved that this is the only type of singularity that occurs for simple closed curves in the plane. However, many other examples were discovered in higher dimensions (most of them by applied mathematicians doing numerical simulations).

I will describe recent work with Tobias H. Colding, MIT, where we:

1. Classify the generic singularities of MCF of closed embedded hypersurfaces.
2. Prove compactness of all (even non-generic) singularities.

I will also discuss an application, where we construct a "generic mean curvature flow". (Received July 28, 2010)